



Problem Resolution Report

NORTHROP GRUMMAN

New Site Voice over Internet Protocol Services
NG/CoSD-054

Date: October 19, 2010

Summary:

In accordance with the provisions of the IT and Telecommunications Service Agreement dated January 24, 2006 ("the Agreement") by and between the County of San Diego ("County") and Northrop Grumman Information Technology, Inc. ("Northrop Grumman" or "Contractor") (hereinafter collectively referred to as "the Parties") agreement is reached on the date shown above.

Issue or Problem:

The Parties wish to provide for a voice telephony service for New Sites based on "Voice over Internet Protocol" (VoIP). This provision will replace the interim arrangement for the deployment of VoIP services at County Site 41 established on October 31, 2008.

Resolution:

1. Section 5.6 of Schedule 4.3, the Statement of Work, is amended as shown on Attachment 1 to this PRR-054 to modify Voice Services to include VOIP capability at new County sites.
2. Exhibit 16.1-1 is amended to add VoIP Services - Single Line and VoIP Services - Multi-line resource units as shown on Attachment 2 to this PRR-054.
3. PRR-054 provides for VoIP Services only at New County Sites. Determination of deployment of VoIP Services at New County Sites will be made jointly by County and Northrop Grumman. Where VoIP is not determined for deployment, standard Voice Services will be installed.
4. VoIP Services will be limited to sites provisioned with Data (EUDJ) Services under the Agreement. VoIP Services will not be available for those New County Sites which do not obtain data services through the Agreement (e.g. San Diego Superior Court, District Attorney, and Sheriff).
5. If a new site is to be provisioned as a VoIP site, both Voice and Data (EUDJ) Services will be delivered via the VoIP platform at that site, unless mutually agreed upon before wiring and infrastructure plans are finalized between the County and Northrop Grumman.
6. Analog Voice Jacks (for FAX/Modem use as an example) will be available at sites with VoIP Services on a case-by-case basis as mutually agreed to by NG and County.



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7. No Digital (non-VoIP) Single-Line or Multi-Line telephones will be provisioned at locations where VoIP services are present.
8. The standard for End-User (Voice) station equipment (telephone set) to be deployed with VoIP services will be optimized for reliable use in IP networks, and will include fixed and/or programmable feature buttons, graphic display, speed dial, and a full duplex speakerphone. Departments or End-Users with business needs that exceed the standard may opt to bear the incremental additional expense of approved, non-standard equipment, which will be made available for purchase through the County's OIPC Catalog.
9. If County employees want a desktop but no phone, they will be charged for an EUDJ, for their desktop and nothing for phone service. If County employees want a desktop and a VoIP phone, they will be charged for both an EUDJ and either a VOIP Services - Multi-line or VOIP Services - Single line VOIP resource unit). If County employees at a new site who previously only wanted a desktop decide to add phone service, they would only be charged the VOIP Services - Multi-line (or in some cases Single line) resource unit as they would already have the EUDJ installed for their desktop. If County employees who previously had both a desktop and a VoIP phone decide to drop Voice Services, the billing would be amended to retain only the EUDJ resource unit and not the VOIP Services - Multi-line or Single Line resource unit component. If County employees have both a desktop and VOIP services and decide to drop the Desktop, the billing will remain an EUDJ and either a VOIP Services - Multi-Line or Single Line resource unit.
10. With regard to the yearly determination of hardware standards for VOIP station equipment, until a new standard is agreed upon by Northrop Grumman and the County, the existing standards will remain in effect.

The resolution of the issue or Problem as described in this Problem Resolution Report shall govern the Parties' actions under the Agreement until a formal amendment of the Agreement is implemented in accordance with the terms of the Agreement, at which time this Problem Resolution Report shall be deemed superseded and shall be null and void.

All other terms and conditions of the Agreement remain unchanged and the Parties agree that such terms and conditions set forth in the Agreement shall continue to apply. Unless otherwise indicated, the terms used herein shall have the same meaning as those given in the Agreement.



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IN WITNESS WHEREOF, The Parties hereto, intending to be legally bound, have executed by their authorized representatives and delivered this Problem Resolution Report as of the date first written above.

COUNTY OF SAN DIEGO

NORTHROP GRUMMAN INFORMATION
TECHNOLOGY, INC.

By: Bruce P. Trozza

By: SL Christian

Name: Bruce P. Trozza

Name: STEPHEN L. CHRISTIANSON

Title: Manager

Title: DIRECTOR OF CONTRACTS

Date: 10-27-10

Date: 19 Oct 2010

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5.6 Voice Services

5.6.1 Voice Services Overview

This section pertains to the Voice Services component within the Network Services Framework. The Voice Services component applies to hardware, software and circuits needed to operate the telecommunications within the County. Services provided within this component include, but are not limited to, single and multi-line voice services, single and multi-line Voice over Internet Protocol (VoIP) services, local dial plans, long distance plans, voice mail, Integrated Voice Response (IVR), Auto Attendants, Automated Call Distribution (ACD), analog jacks and 4-1-1 operator services.

5.6.2 Voice Services High Level Requirements

5.6.2.1. Interconnect all Locations along a common voice network to facilitate end-to-end business functions, reduce toll calls and lower costs.

5.6.2.2. Contractor shall refresh Voice Services assets on a 5 year refresh schedule, 20% per year, unless otherwise agreed by the County in writing, and at a County-approved deployment schedule that will minimize disruption and reduce risk. Refreshes of Voice Services assets may include upgrades of active/intelligent components that provide significant upgrades in functionality and performance, if approved by the County (e.g., PBX network cards – a chassis upgrade may not be necessary).

5.6.2.3. The LAN/WAN supporting VoIP services will be provisioned to provide appropriate Quality of Service and 802.3af Power over Ethernet (POE). A single cable drop as defined in Section 5.4 Data Network Services will be provided for joint use of the desktop and VoIP phones at locations where VoIP services are installed.

5.6.2.4. VoIP services will enable a Switched Ethernet connection for typical voice and data (desktop) services requiring connection to the County network.

5.6.2.5. Documentation that details operation and use of the VoIP telephone sets will be distributed to users of VoIP services.

5.6.2.6 VoIP hardware (voice station equipment) standards will be determined yearly and updates to hardware will go into effect at the start of each Contract Year. The process to set VoIP hardware standards will be based on recommendations made by the Contractor

and approved in writing by the County. Each model selected for a standard should be available from the manufacturer for the entire Contract year.

5.6.3. Voice Services Environment

Scope of the Environment to be Supported

The following further describe and scope Voice Services elements to be supported by Contractor and with which Contractor shall comply.

- Single-Line Voice Services

Single-Line Voice Services are the all the hardware, software and services necessary to provide single-line phone services to End-Users.

- Multi-Line Voice Services

Multi-Line Voice Services are the all the hardware, software and services necessary to provide multi-line phone services to End-Users.

- Single and Multi-Line VoIP Services

VoIP Services components include VoIP end user (Voice) station equipment and Voice Grade of Service elements consistent with Multi-Line and Single-Line Voice Jack Resource Units. Single and Multi-Line VoIP services are all the hardware, software and services necessary to provide single and multi-line VoIP services to end-users.

- Voice Mail

Voice Mail is an option that can be added to Voices Services upon End-User request or a stand-alone option available to End-Users without a phone.

- Analog Jack

The Analog Jack will be used to connect such hardware items as modems, or fax machines.

5.6.4. Voice Services — Requirements, Roles & Responsibilities

The following table identifies the requirements, roles and responsibilities associated with Plan, Build and Operate services.

Voice Service: Plan, Build and Operate Requirements, Roles and Responsibilities

| Voice Service: Plan, Build and Operate Requirements, Roles and Responsibilities | | |
|--|------------|--------|
| Plan Requirements, Roles and Responsibilities | Contractor | County |
| 1. Produce and submit recommendations for Voice Services solutions that best meets County business requirements | X | |
| 2. Review and approve recommended Voice Services solutions that best meet County business requirements | | X |
| 3. Produce and submit operational plans for Voice Services capacity and performance management | X | |
| 4. Review and approve operational plans for Voice Services capacity and performance policies and procedures | | X |
| 5. Produce and submit recommendations for Voice Services architecture | X | |
| 6. Review and approve recommendations for Voice Services architecture | | X |
| 7. Produce and submit Voice Services refresh plan on a yearly basis | X | |
| 8. Review and approve Voice Services refresh plan on a yearly basis | | X |
| 9. Produce and submit recommendations for Voice Services migration to current technology | X | |
| 10. Review and approve recommendations for Voice Services migration to current technology | | X |
| 11. Produce and submit operational policies and procedures for management and support of Voice Services | X | |
| 12. Review and approve operational policies and procedures for management and support of Voice Services | | X |
| Build Requirements, Roles and Responsibilities | Contractor | County |
| 13. Design, test and implement approved Voice Services solutions that best meet County business requirements | X | |
| 14. Provide least cost routing (LCR) analysis and PBX technology that provides LCR (e.g. "tail end-hop off" LCR methodology) | X | |
| 15. Implement approved operational plans for Voice Services capacity and performance management | X | |
| 16. Design, test and implement Voice Services architecture | | X |
| 17. Deploy, manage, communicate and report on activities related to Voice Services refresh | X | |
| 18. Review and approve Voice refresh report | | X |

| Voice Service: Plan, Build and Operate Requirements, Roles and Responsibilities | | |
|---|--------|--------|
| 19. Design, test and implement Voice Services migration to current technology | X | |
| 20. Implement approved operational policies and procedures for management and support of Voice Services | X | |
| Operate Requirements, Roles and Responsibilities | County | County |
| 21. Provide support, including Break-Fix, for all Voice Services assets | X | |
| 22. Perform bandwidth management for Voice Services | X | |
| 23. Support Voice Services refresh | X | |
| 24. Support Voice network optimization and traffic engineering | X | |
| 25. Provide competitive and economically favorable local and long distance rates | X | |
| 26. Manage end-to-end internal and external phone connectivity including hardware and/or peripherals | X | |
| 27. Manage the PBX systems to selectively eliminate central office caller ID call blocking, according to the authorized County personnel | X | |
| 28. Manage PBX systems for class of service according to the authorized County key personnel | X | |
| 29. Manage the PBX systems to provide least-cost routing and tail end hop off for outbound calls | X | |
| 30. Manage interfaces between PBX network and public carriers | X | |
| 31. Manage and support ACD/IVR systems | X | |
| 32. Provide emergency 911 services to County phones | X | |
| 33. Provide adaptive voice telecommunications services and equipment as required by laws affecting the support of the disabled | X | |
| 34. Manage and maintain private dial plan. An integrated numbering plan consistent with the County's current dialing capabilities will be provided. | X | |
| 35. Provide local and long distance voice services | X | |
| 36. Support and manage long distance telephone calling | X | |
| 37. Provide local and long distance usage monitoring and reporting | X | |
| 38. Provide and support analog jacks for equipment such as modems, fax machines, or phones | X | |
| 39. Provide Voicemail services | X | |
| 40. Manage Voicemail security PBXs, voicemail systems, and other Voice Services assets | X | |
| 41. Provide Voicemail usage monitoring and reporting | X | |

| Voice Service: Plan, Build and Operate Requirements, Roles and Responsibilities | | |
|--|---|--|
| 42. Provide Voicemail storage capacity management | X | |
| 43. Provide Voicemail retention management per County requirements and external regulations | X | |
| 44. Perform Voicemail mailbox IMARs | X | |
| 45. Maintain Voicemail mailboxes configurations by End-User | X | |
| 46. Provide new Voicemail End-User training materials | X | |
| 47. Provide directory services to the public through a mix of automated and live operators in order to meet call requirements | X | |
| 48. Provide a secure and searchable online directory service with real time updates (e.g., global directory facility-GDF) | X | |
| 49. Provide 4-1-1 operator services for the County which includes a directory of employees, employee locations, departments and telephone numbers | X | |
| 50. Maintain a directory of County services for 4-1-1 operator services | X | |
| 51. Provide 4-1-1 operator services for employee and public inquiries | X | |
| 52. Update annually telephone numbers with SBC or successor Government pages | X | |
| 53. Maintain and update an employee directory website with data from County Systems | X | |
| 54. Maintain business process, systems, and information for phone book and directory assistance in accordance with County approved system design and business processes | X | |
| 55. Provide teleconferencing services | X | |
| 56. Provide on-demand and prescheduled teleconferences | X | |
| 57. Provide proactive and reactive Voice Services fraud and security management and reporting | X | |
| 58. Monitor and record all data, such as call rating tables, call usage detail and Move, Add, and Remove orders, generate cost allocation reports for local and long distance usage as well as completed Move, Add and Remove orders | X | |
| 59. Provide itemized call detail records, including length of each call by telephone number and charge | X | |
| 60. Provide, maintain and support toll-free (on-net) calls between all County Locations | X | |
| 61. Provide Casual Use Calling including collect calls, person-to-person calls, person-to-person collect calls, remote calls, operator assistance calls, 3rd party calls, dial one calls, dedicated calls and other miscellaneous calls. | X | |

| Voice Service: Plan, Build and Operate Requirements, Roles and Responsibilities | | |
|---|---|--|
| 62. Provide Conference Bridge Calls for calls placed to an audio and Web document sharing conference services that allow multiple people participation and is controlled by a unique access code. | X | |
| 63. Provide Directory Assistance Calls for calls placed to obtain a listed telephone directory number | X | |
| 64. Provide Pay Phones located at County facilities for the public's convenience, which are required by statute. | X | |

19-Oct-10

Attachment 2 to PRR-054 Voice over Internet Protocol Services

| Resource Unit | Schedule 4.3 Cross-Reference Service Framework Component | Unit of Measure | Pricing | Decomposition (specific cost detail breakdown) | Resource Unit Fee (90% to 110% band) | Building Volume (per Contract Year) | Resource Unit Fee (Baseline Volume) | Bundled Resource Unit | Resource Unit Fee (70% to 80% band) | Resource Unit Fee (80% to 90% band) | Resource Unit Fee (110% to 120% band) | Resource Unit Fee (120% to 130% band) | Resource Unit Fee (130% to 140% band) | Measurement Methodology (Specific measurement on last day of month or cumulative use during month) | Depreciation Time Period (in Years) |
|-----------------------------|--|--|----------------------------|---|--------------------------------------|-------------------------------------|-------------------------------------|-----------------------|-------------------------------------|-------------------------------------|---------------------------------------|---------------------------------------|---------------------------------------|--|-------------------------------------|
| VoIP Services - Single-Line | Network Services - Voice Services-- Section 5.6 | Active VoIP Connection for Single-Line Voice | Flood monthly for per unit | Voice over IP phone and LAN switching equipment (lease/depreciation and maintenance, software amortization, circuits, integrated voice response, auto attendance, automated call distribution, 4-1-1 operator services, and maintenance, truck item, BMA's) | \$ 41.37 | 1 | 41 | B2 | \$ 45.66 | \$ 44.57 | \$ 40.84 | \$ 40.40 | Specific | | \$ |
| VoIP Services - Multi-Line | Network Services - Voice Services-- Section 5.6 | Active VoIP Connection for Multi-Line Voice | Flood monthly for per unit | Voice over IP phone and LAN switching equipment (lease/depreciation and maintenance, software amortization, circuits, integrated voice response, auto attendance, automated call distribution, 4-1-1 operator services, and maintenance, truck item, BMA's) | \$ 43.69 | 1 | 44 | B2 | \$ 48.38 | \$ 47.23 | \$ 42.37 | \$ 42.91 | Specific | | \$ |